SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549



FORM 11-K

RECD S.E.C.

JUN 2 8 2005

(Mark One)

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ANNUAL REPORT PURSUANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

1086

For the fiscal year ended December 31, 2004

OR

[]	TRANSITION REPORT PURSUANT TO SECTION	ON 15(d) OF THE
	SECURITIES EXCHANGE ACT OF 1934	PROCESSED
	For the transition period from to	JUL 0 1 2005
	Commission File Number 1-13828	THUMSON FINANCIAL

A. Full title of the plan and the address of the plan, if different from that of the issuer named below:

MEMC RETIREMENT SAVINGS PLAN

B. Name of issuer of the securities held pursuant to the plan and the address of its principal executive office:

MEMC ELECTRONIC MATERIALS, INC.

501 PEARL DRIVE (CITY OF O'FALLON), ST. PETERS, MISSOURI

63376 (Zip Code)

(Address of principal executive offices)



Table of Contents and Definitions

		Page
lent Regi	stered Public Accounting Firm	1
ts Availa	ble for Plan Benefits, December 31, 2004 and 2003	2
nges in A	ssets Available for Plan Benefits, Years Ended December 31,	3
Statemen	ts, December 31, 2004 and 2003	4
chedule o	of Assets (Held at End of Year), December 31, 2004	10
	MEMC Detinament Sovince Plan	
-	Putnam Investments Employee Retirement Income Security Act of 1974 MEMC Electronic Materials, Inc. Margaret Stonum and Thomas Stiffler (January 1, 2004 through Sylvia Roberts and Norm Handshear (January 27, 2004 throu 2004) Sylvia Roberts and R. Delmon Turns (December 2 December 31, 2004)	gh December 19,
	sts Availa nges in A Statemen chedule o	 Employee Retirement Income Security Act of 1974 MEMC Electronic Materials, Inc. Margaret Stonum and Thomas Stiffler (January 1, 2004 through Sylvia Roberts and Norm Handshear (January 27, 2004 through 2004) Sylvia Roberts and R. Delmon Turns (December 2)



KPMG LLP Suite 900 10 South Broadway St. Louis, MO 63102-1761

Report of Independent Registered Public Accounting Firm

Plan Administrator
MEMC Retirement Savings Plan:

We have audited the accompanying statements of assets available for plan benefits of the MEMC Retirement Savings Plan (the Plan) as of December 31, 2004 and 2003, and the related statements of changes in assets available for plan benefits for the years then ended. These financial statements are the responsibility of the Plan's administrator. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the Plan's assets available for plan benefits as of December 31, 2004 and 2003, and the changes in assets available for plan benefits for the years then ended in conformity with accounting principles generally accepted in the United States of America.

Our audits were made for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental schedule of assets (held at end of year) is presented for the purpose of additional analysis and is not a required part of the basic financial statements, but is supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. The supplemental schedule is the responsibility of the Plan's management. The supplemental schedule has been subjected to the auditing procedures applied in the audit of the basic financial statements and, in our opinion, is fairly stated, in all material respects, in relation to the basic financial statements taken as a whole.

KPMG LLP

St. Louis, Missouri June 17, 2005

Statements of Assets Available for Plan Benefits

December 31, 2004 and 2003

	_	2004	2003
Assets:			
Investments at fair value:			
Non-interest bearing cash	\$	141,993	_
Money market funds		2,423,850	704,265
Shares of registered investment companies		43,149,931	35,349,113
Common stock		13,110,937	11,477,341
Common/collective trusts		30,740,699	29,231,701
Loans to participants	_	5,706,114	5,192,883
Total investments at fair value		95,273,524	81,955,303
Investments at contract value:			
Value of investment in PRIMCO Stable Value Fund	_	34,134,521	33,215,230
Receivables:			
Participant		143,440	_
Employer	_	98,072	
Total receivables	_	241,512	
Assets available for plan benefits	\$ _	129,649,557	115,170,533

See accompanying notes to financial statements.

Statements of Changes in Assets Available for Plan Benefits

Years ended December 31, 2004 and 2003

	2004	2003
Additions:		
Earnings from investments:		
Interest income \$	1,696,808	1,725,485
Dividend income	1,015,654	700,897
Net appreciation in fair value of investments	9,827,476	16,550,596
Total income from investments	12,539,938	18,976,978
Contributions:		
Employer	4,614,914	4,470,460
Participants	6,844,723	6,609,150
Participant rollovers	244,375	82,067
Total contributions	11,704,012	11,161,677
Total additions	24,243,950	30,138,655
Deductions:		
Benefit payments to participants	9,742,915	9,951,438
Administrative expenses	22,011	21,924
Total deductions	9,764,926	9,973,362
Net increase in assets available for plan benefits	14,479,024	20,165,293
Assets available for plan benefits:		
Beginning of year	115,170,533	95,005,240
End of year \$	129,649,557	115,170,533

See accompanying notes to financial statements.

Notes to Financial Statements
December 31, 2004 and 2003

(1) Description of the Plan

The following description of the Plan provides only general information. Participants should refer to the plan document for a more complete description of the Plan's provisions.

(a) General

The Plan was established on April 1, 1989 under the provisions of Section 401(k) of the Internal Revenue Code and is a defined contribution retirement savings plan, subject to the provisions of ERISA, sponsored by the Company. Generally, all employees of the Company compensated in U.S. dollars from a payroll location within the United States are eligible to participate in the Plan.

(b) Contributions

Each participant may elect to contribute from 1% to 50% of his/her covered compensation as described in the Plan on a before-tax basis. The before-tax contribution is limited to the amount specified by Section 402(g) of the Internal Revenue Code (\$13,000 and \$12,000 in 2004 and 2003, respectively). A participant is eligible to receive employer matching contributions of 100% of the first 3% of the employee's contribution, 50% of the next 2% contributed, and 20% of the next 1% contributed, up to 4.2% of the participant's covered compensation for the Plan year. Effective January 1, 2003, the Company began contributing 2% of compensation as a special employer contribution on behalf of those individuals who were frozen in the MEMC Pension Plan or hired on or after January 2, 2002.

(c) Participants' Accounts

Each participant account is comprised of the following subaccounts: a before-tax account, an after-tax account, a safe harbor matching account, a matching account, and a rollover account, as applicable. Participants may elect to participate and/or adjust contribution elections at any time. Each participant account is credited with participant contributions as specified by the participant; an allocation of the Company's contributions; and the income, loss, appreciation, and depreciation attributable thereto.

(d) Vesting

Participant matching accounts are immediately and fully vested.

(e) Investment Options

Participants may direct investment or reinvestment of contributions credited to his/her individual account in any one or a combination of the investment options in increments of 1% of the amount credited. Interfund transfers in and out of the MEMC Stock Fund are limited to one per calendar month. Participants may elect to adjust all other investment options daily.

The following investment options were available:

Putnam International Growth Fund—Funds are invested in a diversified portfolio of stocks of companies located mainly outside the United States of America.

Notes to Financial Statements December 31, 2004 and 2003

Putnam Vista Fund—Funds are invested in a variety of stocks that have the potential for above-average growth, including those of widely traded larger companies; smaller, less well-known companies; and, currently, mostly midsize firms.

Putnam S&P 500 Index Fund—Funds are invested to seek a return, before the assessment of fees, that closely approximates the return of the S&P 500 Index, which is an indicator of U.S. stock market performance.

The George Putnam Fund of Boston—Funds are invested in a well-diversified portfolio composed mostly of stocks and corporate and U.S. Government bonds.

PIMCO Total Return Fund—Funds are invested in bonds that target intermediate-maturity, fixed-income securities from all major sectors of the bond market.

PRIMCO Stable Value Fund—Funds are invested in assets consisting of a number of investment contracts with a diversified, highly rated group of insurance companies, banks, and other financial institutions.

MEMC Stock Fund—Funds are invested in common stock of MEMC Electronic Materials, Inc.

RS Diversified Growth Fund—Funds are invested primarily in small- and mid-cap size companies. The fund's focus is to achieve long-term capital growth by creating a portfolio broadly diversified over industries and companies.

Putnam Voyager Fund—Funds are invested primarily in stock of large and midsize companies across a range of industries. The fund targets companies that are enjoying rising sales and profits and that are expected to grow over time.

Dodge and Cox Stock Fund—Funds are invested in a broadly diversified portfolio of common stocks. The fund's focus is long-term growth and principal and income.

DFA Small Cap Value Fund—Funds are invested in securities of small-cap companies located in the United States. The fund seeks growth of principal by focusing on companies that have a high book value in relation to their market value.

(f) Loans to Participants

Participants may apply for and receive loans from their vested account. Generally, no more than two loans may be outstanding to a participant at any one time. The amount of loans to an individual participant shall not exceed the lesser of \$50,000 or one-half of the vested portion of the account balance of the participant as of the date the loan is requested by the participant without regard to any contributions allocated to the account of the participant on or after such date. The minimum amount of any loan shall be \$1,000.

5

Notes to Financial Statements December 31, 2004 and 2003

(g) Payment of Benefits

Under the terms of the Plan, participants or their designated beneficiaries are entitled to receive the amounts credited to their accounts upon normal retirement at age 65, early retirement, disability, or death. Participants terminating prior to retirement are entitled to receive their account balance. Distributions are made in the form of a lump-sum payment. If the participant's vested balance exceeds \$5,000, the participant may elect to defer the receipt of the distributions.

A participant may elect to withdraw all or any portion of the amount credited to his after-tax account that exceeds the aggregate amount of matched after-tax contributions to such account in the 24-month period ending on the valuation date as of which such withdrawal is made.

A participant may elect to withdraw the amount credited to his matching account that exceeds the aggregate contributions credited to such account in the 24-month period ending on the valuation date immediately preceding the date as of which such withdrawal is made.

A participant who has attained age 59½ may elect to withdraw the amounts credited to his before-tax and safe harbor matching account and his nonmatching account that exceeded the aggregate contributions credited to such accounts in the 24-month period ending on the valuation date immediately preceding the date as of which such withdrawal is made. A participant who has not yet attained age 59½ shall not be eligible to withdraw amounts credited to his before-tax and safe harbor matching account, and his nonmatching account except as provided for hardship withdrawals of before-tax contributions.

A participant may elect to withdraw all or any portion of the amount credited to his rollover account.

In addition, hardship withdrawals are allowed for employees under age 59½ under certain circumstances in an amount equal to the value of accumulated before-tax contributions and the safe harbor match account. Account earnings are not eligible for inclusion in the withdrawal amount. Participants incurring a hardship withdrawal will not be eligible to make further contributions to the plan for at least 12 months after the receipt of such distribution.

(2) Summary of Accounting Policies

The following are the significant accounting policies followed by the Plan:

(a) Basis of Accounting

The accompanying financial statements have been prepared on the accrual basis of accounting, except for benefit payments, which are recorded when paid.

(b) Use of Estimates

The preparation of the accompanying financial statements in conformity with accounting principles generally accepted in the United States of America requires the Plan Administrator to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of changes therein during the reporting period. Actual results could differ from those estimates.

6

(Continued)

Notes to Financial Statements December 31, 2004 and 2003

(c) Valuation of Investments

Purchases and sales of investments are recorded on a trade-date basis. Interest income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date. Investments are valued as follows:

- Investments in the stock fund and shares of a registered investment company are valued based on the fair value as determined by quoted market price on a daily basis.
- Investments in common/collective or pooled funds maintained by the Trustee are valued at the
 price furnished by the Trustee. The cost of securities sold is based on the average cost of all
 such securities held at the time of sale.
- The value in the loan fund represents the unpaid principal of employee loans. Loans to participants are valued at cost, which approximates fair value.
- Investments in the PRIMCO Stable Value Fund are valued at contract value as the contracts are fully benefit responsive. Contract value represents contributions made under the contract, plus interest at the contract rate, less funds used to pay for benefits. At December 31, 2004 and 2003, the contract value approximated the fair value. There are no reserves against contract value for credit risk of the contract issuer or otherwise. The average yield and crediting interest rates ranged from 2.85% to 6.32% in 2004 and 4.12% to 5.96% in 2003. (Refer to footnote 7 for further discussion.)

(d) Administrative Expenses

The reasonable expenses incident to the operation of this Plan shall be paid out of the trust fund, unless the Company, in its sole discretion, elects at any time to pay part or all of such expenses.

(3) Trust Fund Managed by the Trustee

The Plan assets are maintained in a trust fund. The investments, and changes therein, of this trust fund have been reported to the Plan by the Trustee.

(4) Plan Termination

Although it has not expressed any intent to do so, the Company has the right under the Plan to discontinue its contributions at any time and to terminate the Plan subject to the provisions of ERISA.

(5) Tax Status

The Internal Revenue Service issued its latest determination letter on June 6, 2001, which stated that the Plan and its underlying trust qualify under the applicable provisions of the Internal Revenue Code and, therefore, are exempt from Federal income taxes. The Plan has been amended since receiving the determination letter. However, the Plan Administrator and the Plan's counsel believe that the Plan is currently designed and being operated in compliance with the applicable requirements of the Internal Revenue Code.

Notes to Financial Statements December 31, 2004 and 2003

(6) Investments

The following table presents investments as of December 31, 2004 and 2003. Investments that represent 5% or more of the Plan's assets are separately identified.

	_	2004	2003
Investments, at fair value:			
The George Putnam Fund of Boston	\$	11,842,239	11,552,547
Putnam S&P 500 Index Fund		30,740,699	29,231,778
MEMC Electronic Materials, Inc. common stock		13,110,937	11,469,965
RS Diversified Growth Fund		7,749,676	8,661,503
Other	_	31,829,973	21,039,510
		95,273,524	81,955,303
Investments, at contract value:			
Union Bank of Switzerland AG		6,095,928	5,980,830
JP Morgan Chase Bank		6,103,243	5,981,310
Other	_	21,935,350	21,253,090
	_	34,134,521	33,215,230
Total investments	\$ _	129,408,045	115,170,533

Net Appreciation in Fair Value

The Plan's investments (including investments bought, sold, and held during the year) appreciated in value by \$9,827,290 in 2004 and by \$16,550,596 in 2003, as follows:

	 2004	2003
Investments at fair value as determined by quoted market price:		
Shares of registered investment companies Common/collective trusts MEMC Electronic Materials, Inc. common stock	\$ 2,498,218 2,941,439 4,387,819	6,085,003 6,537,881 3,927,712
Net appreciation in fair value	\$ 9,827,476	16,550,596

(7) Investment Contract with Insurance Company

The Plan has entered into a benefit-responsive investment contract with Invesco. Invesco maintains the contributions in a general account. The account is credited with earnings on the underlying investments and charged for participant withdrawals and administrative expenses. The contract is included in the financial statements at contract value as reported to the Plan by Invesco. Contract value represents contributions made under the contract, plus earnings, less participant withdrawals and administrative expenses. Participants may ordinarily direct the withdrawal or transfer of all or a portion of their investment at contract value.

Notes to Financial Statements December 31, 2004 and 2003

(8) Related Party Transactions

Certain Plan investments are shares of mutual funds managed by Putnam Investments. Putnam Investments is the Trustee, as defined by the Plan, and, therefore, these transactions qualify as party-in-interest transactions. Fees paid by the Plan for the investment management services amounted to \$22,011 and \$21,924 for the years ended December 31, 2004 and 2003, respectively.

(9) Reconciliation of Financial Statements to Form 5500

The following is a reconciliation of assets available for benefits per the financial statements at December 31, 2004 and 2003 to Form 5500:

•	_	2004	2003
Assets available for benefits per the			
financial statements	\$	129,649,557	115,170,533
Contributions receivable:			
Participant		(143,440)	_
Employer	_	(98,072)	
Assets available for benefits per the Form 5500	\$ =	129,408,045	115,170,533

The following is a reconciliation of contributions per the financial statements for the year ended December 31, 2004 and 2003 to Form 5500:

	2004	2003
Contributions per the financial statements	\$ 11,704,012	30,138,655
Contributions receivable:		
Participant	(143,440)	
Employer	(98,072)	
Contributions per the Form 5500	\$ 11,462,500	30,138,655

(10) Risks and Uncertainties

The Plan invests in various investment securities. Investment securities are exposed to various risks such as interest rate, market, and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect participants' account balances and the amounts reported in the statement of assets available for benefits.

Schedule H, line 4i—Schedule of Assets (Held at End of Year)

December 31, 2004

Identity of issue, borrower, lessor, or similar party		Current value
PIMCO Total Return Fund	\$	6,215,555
The George Putnam Fund of Boston *		11,842,239
Putnam Vista Fund *		3,174,857
Putnam S&P 500 Index Fund *		30,740,699
Putnam International Growth Fund *		2,414,352
Putnam Voyager Fund *		1,590,012
DFA Small Cap Value Fund		4,416,456
RS Diversified Growth Fund		7,749,676
Dodge and Cox Stock Fund		5,746,785
MEMC Electronic Materials, Inc. common stock		13,110,937
PRIMCO Stable Value Fund:		
John Hancock Mutual Life—#8313, 6.32%		920,668
UBS AG—#5178-T, 4.91%		6,095,928
State Street Bank Short Term Bond—#103045, 4.39%		4,332,925
ING Life Insurance #60030, 4.55%		4,355,832
Bank of America NT & SA—#03-069-T, 5.71%		5,221,340
Monumental Life—#MDA-00551TR, 4.32%		6,043,532
Monumental Life—#MDA-00100TR, 2.85%		1,061,052
JP Morgan Chase Bank—#441894-MGC, 4.93%		6,103,243
Participant loans, interest rates ranging from 4% to 5%		5,706,114
Putnam Institutional Management—Interest bearing cash		2,423,850
Non-interest bearing cash	_	141,993
Total investments	\$_	129,408,045

^{*} Represents party in interest allowable by ERISA

See accompanying report of independent registered public accounting firm.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Employee Benefits Committee has duly caused this annual report to be signed on its behalf by the undersigned hereunto duly authorized.

MEMC Retirement Savings Plan

Date: June 27, 2005

Richard Delmon Turns

Plan Administrator

EXHIBIT INDEX

Exhibit No. 23

Description

Consent of KPMG LLP



Consent of Independent Registered Public Accounting Firm

Plan Administrator
MEMC Electronic Materials, Inc.:

We consent to the incorporation by reference in the registration statement (Nos. 333-19159) on Form S-8 of MEMC Electronic Materials, Inc. of our report dated June 17, 2004, with respect to the statements of assets available for the plan benefits of MEMC Retirement Savings Plan as of December 31, 2004 and 2003, the related statements of changes in assets available for plan benefits for each of the years then ended, and the related supplemental schedule as of December 31, 2004, which report appears in the 2004 Annual Report on Form 11-K of MEMC Retirement Savings Plan.

KPMG LLP

St. Louis, Missouri June 24, 2004